

WHAT IS CLAIMED IS:

1. A recreational vehicle comprising:

a main housing defining an interior living space having a floor located at a first level wherein the main housing defines a first wall having an opening formed therein;

a slide-out housing having a floor an outer wall positioned within the opening in the first wall of the main housing, wherein the slide-out housing is adapted to be movable between a retracted position wherein the floor of the slide-out housing is positioned at a second level above the first level of the floor of the main housing and the outer wall is positioned substantially adjacent the first wall of the main housing and a deployed position wherein the outer wall is extended away from the first wall of the main housing and the floor of the slide-out housing is positioned at a third level below the second level so as to be more planar with the first level; and

a piston actuated movement mechanism mounted to the recreational vehicle so as to be able to move the side out housing from the second level to the third level when the side-out housing is in the deployed position and move the floor of the slide-out housing from the third level to the second level when the slide-out housing is in the retracted position.

2. The vehicle of Claim 1, wherein the third level is co-planar with the first level.

3. The vehicle of Claim 1, further comprising a chassis and a set of wheels to permit rolling movement of the recreational vehicle over the ground.

4. The vehicle of Claim 3, wherein the recreational vehicle comprises a motorhome.

5. The vehicle of Claim 1, further comprising a deployment a retraction mechanism that moves the slide-out housing between the first and second positions.

6. The vehicle of Claim 5, wherein the deployment and retraction mechanism comprises a housing member that is mounted to the main housing and a telescoping member that is mounted to the slide-out housing, and wherein the telescoping member outwardly extends from the housing member so as to deploy the slide-out housing from the main

housing, and wherein the telescoping member extends within the housing member so as to retract the slide-out housing into the main housing.

7. The vehicle of Claim 6, wherein the piston actuating movement mechanism comprises at least one piston with an extendable arm wherein the at least one piston is mounted to the slide-out housing such that the arm of the at least one piston can bear against the telescoping member so as to raise and lower the floor of the housing during movement of the slide-out housing.

8. The vehicle of Claim 1, wherein the piston actuating movement mechanism comprises:

at least one piston mounted to the main housing so as to extend an arm outward away from the main housing;

a pivot point secured to the main housing; and

a movement member coupled to the pivot point and the at least one piston mounted to the main housing such that outward movement of the piston arm results in vertical movement of the movement member so as to exert an upward force on the slide-out housing to thereby move the floor of the slide-out from the third level to the second level and wherein inward movement of the piston arm results in a vertical movement of the movement member so as permit the floor of the slide-out housing to move from the second level to the third level.

9. The vehicle of Claim 7, wherein the at least one piston comprises two parallel mounted pistons and piston actuated movement mechanism comprises two pivot points with the movement member extending there between.

10. The vehicle of Claim 8, wherein the movement member includes a member extending between the two pivot points and a roller that is attached to the rotating members via the arms of the two pistons respectively wherein the arms of the pistons includes a pivot point such that extension of the arms results in upward movement of the roller and retraction of the arms results in downward movement of the roller.

11. The vehicle of Claim 1, wherein the piston actuating movement mechanism comprises at least one piston having an arm wherein the at least one piston is mounted in the main housing such that the arm can be extended in a direction that has a vertical component

so as to be able to move the floor of the slide-out housing from the third level to the second level and so that retraction of the arm of the at least one piston permits the floor of the slide-out housing to be able to drop from the second level to the third level during deployment of the slide-out housing.

12. The vehicle of Claim 11, wherein the piston actuating movement mechanism comprises two parallel pistons with a roller interposed there between, wherein the pistons are mounted so that the arms movement vertically upward and downward at a location adjacent where the floor of the slide-out housing is proximate the floor of the main housing when the slide-out housing is in the deployed configuration.

13. A recreational vehicle comprising:

a main housing defining an interior living space having a floor located at a first level wherein the main housing defines a first wall having an opening formed therein;

an expandable room having a floor an outer wall positioned within the opening in the first wall of the main housing, wherein the expandable room is adapted to be movable between a retracted position wherein the floor of the expandable room is positioned at a second level above the first level of the floor of the main housing and the outer wall is positioned substantially adjacent the first wall of the main housing and a deployed position wherein the outer wall is extended away from the first wall of the main housing and the floor of the expandable room is positioned at a third level below the second level so as to be more planar with the first level; and

a piston actuated movement mechanism mounted to the recreational vehicle, the piston actuated movement mechanism comprising at least one piston mounted to the main housing so as to extend an arm outward away from the main housing, a pivot point secured to the main housing, and a movement member coupled to the pivot point and the at least one piston mounted to the main housing such that outward movement of the piston arm results in vertical movement of the movement member so as to exert an upward force on the expandable room to thereby move the floor of the slide-out from the third level to the second level and wherein inward movement of

the piston arm results in a vertical movement of the movement member so as permit the floor of the expandable room to move from the second level to the third level.

14. The vehicle of Claim 13, wherein the third level is co-planar with the first level.

15. The vehicle of Claim 13, further comprising a chassis and a set of wheels to permit rolling movement of the recreational vehicle over the ground.

16. The vehicle of Claim 15, wherein the recreational vehicle comprises a motorhome.

17. The vehicle of Claim 13, further comprising a deployment a retraction mechanism that moves the expandable room between the first and second positions.

18. The vehicle of Claim 17, wherein the deployment and retraction mechanism comprises a housing member that is mounted to the main housing and a telescoping member that is mounted to the expandable room, and wherein the telescoping member outwardly extends from the housing member so as to deploy the expandable room from the main housing, and wherein the telescoping member extends within the housing member so as to retract the expandable room into the main housing.

19. The vehicle of Claim 18, wherein the piston actuating movement mechanism comprises at least one piston with an extendable arm wherein the at least one piston is mounted to the expandable room such that the arm of the at least one piston can bear against the telescoping member so as to raise and lower the floor of the housing during movement of the expandable room.

20. The vehicle of Claim 13, wherein the at least one piston comprises two parallel mounted pistons and piston actuated movement mechanism comprises two pivot points with the movement member extending there between.

21. The vehicle of Claim 13, wherein the movement member includes a member extending between the two pivot points and a roller that is attached to the rotating members via the arms of the two pistons respectively wherein the arms of the pistons includes a pivot point such that extension of the arms results in upward movement of the roller and retraction of the arms results in downward movement of the roller.

22. The vehicle of Claim 13, wherein the piston actuating movement mechanism comprises at least one piston having an arm wherein the at least one piston is mounted in the main housing such that the arm can be extended in a direction that has a vertical component so as to be able to move the floor of the expandable room from the third level to the second level and so that retraction of the arm of the at least one piston permits the floor of the expandable room to be able to drop from the second level to the third level during deployment of the expandable room.

23. The vehicle of Claim 22, wherein the piston actuating movement mechanism comprises two parallel pistons with a roller interposed there between, wherein the pistons are mounted so that the arms movement vertically upward and downward at a location adjacent where the floor of the expandable room is proximate the floor of the main housing when the expandable room is in the deployed configuration.

24. A recreational vehicle comprising:

- a main housing defining an interior living space having a floor located at a first level wherein the main housing defines a first wall having an opening formed therein;

- a slide-out housing having a floor an outer wall positioned within the opening in the first wall of the main housing, wherein the slide-out housing is adapted to be movable between a retracted position wherein the floor of the slide-out housing is positioned at a second level above the first level of the floor of the main housing and the outer wall is positioned substantially adjacent the first wall of the main housing and a deployed position wherein the outer wall is extended away from the first wall of the main housing and the floor of the slide-out housing is positioned at a third level below the second level so as to be more planar with the first level; and

- a piston actuated movement mechanism mounted to the recreational, the piston actuating movement mechanism comprising at least one piston having an arm wherein the at least one piston is mounted in the main housing such that the arm can be extended in a direction that has a vertical component so as to be able to move the floor of the slide-out housing from the third level to the second level and so that retraction of the arm of the at least one piston permits the floor of the slide-out

housing to be able to drop from the second level to the third level during deployment of the slide-out housing.

25. The vehicle of Claim 24, wherein the third level is co-planar with the first level.

26. The vehicle of Claim 24, further comprising a chassis and a set of wheels to permit rolling movement of the recreational vehicle over the ground.

27. The vehicle of Claim 26, wherein the recreational vehicle comprises a motorhome.

28. The vehicle of Claim 24, further comprising a deployment a retraction mechanism that moves the slide-out housing between the first and second positions.

29. The vehicle of Claim 28, wherein the deployment and retraction mechanism comprises a housing member that is mounted to the main housing and a telescoping member that is mounted to the slide-out housing, and wherein the telescoping member outwardly extends from the housing member so as to deploy the slide-out housing from the main housing, and wherein the telescoping member extends within the housing member so as to retract the slide-out housing into the main housing.

30. The vehicle of Claim 29, wherein the piston actuating movement mechanism comprises at least one piston with an extendable arm wherein the at least one piston is mounted to the slide-out housing such that the arm of the at least one piston can bear against the telescoping member so as to raise and lower the floor of the housing during movement of the slide-out housing.

31. The vehicle of Claim 24, wherein the piston actuating movement mechanism comprises:

- at least one piston mounted to the main housing so as to extend an arm outward away from the main housing;

- a pivot point secured to the main housing; and

- a movement member coupled to the pivot point and the at least one piston mounted to the main housing such that outward movement of the piston arm results in vertical movement of the movement member so as to exert an upward force on the slide-out housing to thereby move the floor of the slide-out from the third level to the

second level and wherein inward movement of the piston arm results in a vertical movement of the movement member so as permit the floor of the slide-out housing to move from the second level to the third level.

32. The vehicle of Claim 31, wherein the at least one piston comprises two parallel mounted pistons and piston actuated movement mechanism comprises two pivot points with the movement member extending there between.

33. The vehicle of Claim 32, wherein the movement member includes a member extending between the two pivot points and a roller that is attached to the rotating members via the arms of the two pistons respectively wherein the arms of the pistons includes a pivot point such that extension of the arms results in upward movement of the roller and retraction of the arms results in downward movement of the roller.

34. The vehicle of Claim 24, wherein the piston actuating movement mechanism comprises two parallel pistons with a roller interposed there between, wherein the pistons are mounted so that the arms movement vertically upward and downward at a location adjacent where the floor of the slide-out housing is proximate the floor of the main housing when the slide-out housing is in the deployed configuration.

35. A recreational vehicle comprising:

- a main housing defining an interior living space having a floor located at a first level wherein the main housing defines a first wall having an opening formed therein;

- an expandable room having a floor an outer wall positioned within the opening in the first wall of the main housing, wherein the expandable room is adapted to be movable between a retracted position wherein the floor of the expandable room is positioned at a second level above the first level of the floor of the main housing and the outer wall is positioned substantially adjacent the first wall of the main housing and a deployed position wherein the outer wall is extended away from the first wall of the main housing and the floor of the expandable room is positioned at a third level below the second level so as to be more planar with the first level; and

- a piston actuated movement mechanism mounted to the recreational vehicle so as to be able to move the side out housing from the second level to the third level

when the side-out housing is in the deployed position and move the floor of the expandable room from the third level to the second level when the expandable room is in the retracted position, and wherein the piston actuating movement mechanism comprises at least one piston with an extendable arm wherein the at least one piston is mounted to a portion of the expandable room such that the arm of the at least one piston engages a portion of the main housing so as to raise and lower the floor of the housing during movement of the expandable room.

36. The vehicle of Claim 35, wherein the third level is co-planar with the first level.

37. The vehicle of Claim 35, further comprising a chassis and a set of wheels to permit rolling movement of the recreational vehicle over the ground.

38. The vehicle of Claim 37, wherein the recreational vehicle comprises a motorhome.

39. The vehicle of Claim 35, further comprising a deployment a retraction mechanism that moves the expandable room between the first and second positions.

40. The vehicle of Claim 39, wherein the deployment and retraction mechanism comprises a housing member that is mounted to the main housing and a telescoping member that is mounted to the expandable room, and wherein the telescoping member outwardly extends from the housing member so as to deploy the expandable room from the main housing, and wherein the telescoping member extends within the housing member so as to retract the expandable room into the main housing.

41. The vehicle of Claim 40, wherein the piston actuating movement mechanism comprises at least one piston with an extendable arm wherein the at least one piston is mounted to the expandable room such that the arm of the at least one piston can bear against the telescoping member so as to raise and lower the floor of the housing during movement of the expandable room.

42. The vehicle of Claim 35, wherein the piston actuating movement mechanism comprises:

at least one piston mounted to the main housing so as to extend an arm outward away from the main housing;



a pivot point secured to the main housing; and

a movement member coupled to the pivot point and the at least one piston mounted to the main housing such that outward movement of the piston arm results in vertical movement of the movement member so as to exert an upward force on the expandable room to thereby move the floor of the slide-out from the third level to the second level and wherein inward movement of the piston arm results in a vertical movement of the movement member so as permit the floor of the expandable room to move from the second level to the third level.

43. The vehicle of Claim 42, wherein the at least one piston comprises two parallel mounted pistons and piston actuated movement mechanism comprises two pivot points with the movement member extending there between.

44. The vehicle of Claim 43, wherein the movement member includes a member extending between the two pivot points and a roller that is attached to the rotating members via the arms of the two pistons respectively wherein the arms of the pistons includes a pivot point such that extension of the arms results in upward movement of the roller and retraction of the arms results in downward movement of the roller.

45. The vehicle of Claim 35, wherein the piston actuating movement mechanism comprises at least one piston having an arm wherein the at least one piston is mounted in the main housing such that the arm can be extended in a direction that has a vertical component so as to be able to move the floor of the expandable room from the third level to the second level and so that retraction of the arm of the at least one piston permits the floor of the expandable room to be able to drop from the second level to the third level during deployment of the expandable room.

46. The vehicle of Claim 45, wherein the piston actuating movement mechanism comprises two parallel pistons with a roller interposed there between, wherein the pistons are mounted so that the arms movement vertically upward and downward at a location adjacent where the floor of the expandable room is proximate the floor of the main housing when the expandable room is in the deployed configuration.

47. A method of moving a slide-out assembly of a recreational vehicle, the method comprising:

positioning a slide-out room within the main housing of a recreational vehicle such that the floor of the slide-out room is positioned at a first level above the floor of the main housing and such that an outer wall of the slide-out room is positioned proximate to the outer wall of the main housing;

deploying the slide-out room into a deployed position wherein the outer wall of the slide-out room is positioned distally from the outer wall of the main housing to thereby increase the floor space of the recreational vehicle;

lowering the floor of the slide-out room from the first level to a second level which is more proximate the level of the floor of the main housing;

retracting the slide-out room such that the outer wall of the slide-out room is proximate the outer wall of the main housing; and

moving a piston member such that the arm of the piston member moves the floor of the slide-out room from the second level to the first level when the slide-out room is retracted.

48. The method of Claim 47, wherein lowering the floor of the slide-out room from the first level to the second level comprises moving the floor of the slide-out room from a level above the floor of the main level in the retracted position to a level that is substantially co-planar with the floor of the main section of the housing.

49. The method of Claim 47, wherein moving the piston member comprises extending a piston member outward from the main housing so as to engage a linkage member of a roller assembly that rises to engage the slide-out to thereby move the floor of the slide-out up to the first level.

50. The method of Claim 47, wherein moving the piston member comprises extending a piston member coupled between the slide-out room and the main level so as to raise the floor of the slide-out from the second level to the first level as the slide-out is being retracted.

51. The method of Claim 50, wherein extending a piston member comprises extending an arm of a piston mounted to the main housing so as to engage the slide-out room while the slide-out room is being retracted to thereby move the slide-out room from the second level to the first level.

52. The method of Claim 47, wherein extending a piston member comprises extending an arm of a piston mounted to the slide-out room so as to engage a portion of the recreational vehicle to thereby lift the slide-out room from the second level to the first level as the slide-out room is being retracted.

53. The method of Claim 52, wherein extending the piston member comprises extending an arm of the piston so as to engage a telescoping arm that extends and retracts the slide-out room from the main housing to thereby lift the slide-out room during retraction of the slide-out room.